

**EXHIBIT 83
FILED UNDER SEAL**

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

5 WAYMO LLC,)
6 Plaintiff,)
7 vs.) Case No.
8 UBER TECHNOLOGIES, INC.,)
9 OTTOMOTTO LLC; OTTO TRUCKING)
10 LLC,)
11 Defendants.)
12 _____)

*** CONFIDENTIAL - ATTORNEYS' EYES ONLY ***

VIDEOTAPED DEPOSITION OF PAUL McMANAMON

San Francisco, California

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Volume I

20 Reported by:
21 CARLA SOARES
22 CSR No. 5908
23 Job No. 2598912
24
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1 taking out all of them. 10:19:56

2 Q Okay.

3 A They're relatively similar.

4 Q Did you do any measurements during this

5 inspection? 10:20:01

6 A I did not.

7 Q You did not look at any Waymo LiDAR

8 devices in person, correct?

9 A As far as I understood my task, my task

10 was to compare the Uber Fuji system against claimed 10:20:14

11 trade secrets by Google and patents by Google, or

12 Waymo -- sorry, I should have said "Waymo" -- and so

13 I didn't feel it was really necessary to examine any

14 particular devices that Google or Waymo had built.

15 Q You understand that Waymo developed those 10:20:37

16 patents and trade secrets while it was building its

17 LiDAR devices, correct?

18 A Yes.

19 Q But you didn't think it was necessary to

20 look at the actual devices as part of your analysis? 10:20:44

21 A The task, as I understand it, is to see

22 whether there was any infringement of the patents or

23 any use of the trade secrets. And so that was the

24 task that I attempted.

25 Q And your list of materials considered, 10:21:10

1 details of these designs. 10:39:38

2 Q So you agree, it's not your opinion that
3 he had that design in Exhibit 68 in October 2015?

4 A I don't know exactly when this particular
5 design was developed. He may have told me, but I 10:39:49
6 don't know exactly when it was developed.

7 Q Okay. The design -- just for the record,
8 the design in Exhibit 68 is what --

9 A Yes. I don't remember exactly when it was
10 developed. 10:40:01

11 Q Okay.

12 A I do know that he had the [REDACTED]
13 concept. But when these exact details, [REDACTED]
14 [REDACTED], I don't know exactly when
15 that happened. 10:40:08

16 Q Okay. And so back to your declaration,
17 paragraph 43, and fortunately we have a picture of
18 it here in your declaration.

19 A Okay.

20 Q This is, I believe -- 10:40:19

21 A Yes.

22 Q -- a [REDACTED] from a RFQ
23 that --

24 A Correct.

25 Q -- Mr. Boehmke sent to Velodyne? 10:40:26

1 A Yes. 10:40:28

2 Q And this -- you agree with me that this

3 [REDACTED] --

4 A I'd have to [REDACTED] on

5 here. Wait a minute. 10:40:45

6 There are [REDACTED]

7 Q Okay. And you consider this [REDACTED]

8 [REDACTED]?

9 A I do consider this [REDACTED]. Yes.

10 It's a foveated vision type of concept. 10:40:58

11 Q Okay. That was my next question.

12 You consider it foveated vision?

13 A Yes.

14 Q Do you agree with me that at least as far

15 as you can tell on this diagram, [REDACTED] 10:41:09

16 [REDACTED]

17 A They appear to be [REDACTED] as I

18 look at them.

19 Q Okay. Do you agree with me that the

20 [REDACTED] in paragraph 43 of your 10:41:28

21 declaration is not the same as [REDACTED] in

22 Exhibit 68 that I've put in front of you?

23 A The main point of this figure is the

24 concept. And if you look at the right of that

25 figure, you'll even see it says, [REDACTED] 10:41:44

1 Q Correct me if I'm wrong, but I believe 10:43:02
2 your declaration does not analyze or does not
3 provide a description of what Mr. Boehmke was doing
4 between March 2016 and late October 2016. Is that
5 fair? 10:43:13

6 A I believe that's fair. Yes.

7 Q You understand that Mr. Haslim, in his
8 declaration, he said that the work on Fuji began in
9 late October 2016.

10 Does that sound right? 10:43:28

11 A That sounds approximately right.

12 Q Okay. So there wasn't a specific Fuji
13 design prior to late October 2016 as far as you
14 know?

15 A I don't -- I don't know exactly when the 10:43:37
16 Fuji design came into fruition.

17 Q And then paragraph 48 of your declaration,
18 one thing you say is that -- and I'm looking at the
19 last sentence. You say, "The [REDACTED]

20 [REDACTED] of 10:43:58
21 the Fuji design are based on Mr. Boehmke's work on
22 [REDACTED]."

23 Do you see that?

24 A I do.

25 Q And I just want to make sure I'm clear. 10:44:09

1 You don't provide a specific analysis to 10:44:12
2 support that statement in your declaration?

3 A As I stated a few times, I believe the
4 important thing is that he developed the concept of
5 [REDACTED]. And then they used that in order 10:44:23
6 to meet the requirements that they set for the
7 LiDAR.

8 Q Okay. I just want to make sure I'm clear.

9 You didn't do the analysis to show that
10 what he conceived of, his version of [REDACTED] 10:44:35
11 [REDACTED], was actually implemented into the Fuji
12 design; that's not an analysis you provided in your
13 declaration?

14 A I believe his [REDACTED]
15 [REDACTED] probably changed 10:44:52
16 over time.

17 So looking at the earlier [REDACTED]
18 that he had might not be as productive, other than
19 learning the concept, because I believe it did
20 evolve, you know, as they looked at their 10:45:08
21 requirements in more detail.

22 Q And at any point in time, you didn't
23 compare Mr. Boehmke's specific work -- your
24 declaration doesn't compare his specific work to
25 what ultimately ended up in Exhibit 68? 10:45:22

1 A I did not end up analyzing any of the 10:45:27
2 particular exact earlier ones and compare it with
3 the final one that they ended up -- you know, well,
4 the final as of now.

5 Q Okay. Jumping up a little bit, 10:45:39
6 paragraph 46 of your declaration --

7 A Okay.

8 Q -- you said that Mr. Boehmke developed his
9 designs prior to Uber's acquisition of Otto in
10 August of 2016. 10:45:51

11 Do you see that?

12 A I do see that.

13 Q At the time you wrote your declaration,
14 was it your understanding that Mr. Boehmke was
15 working independently of Otto? 10:45:58

16 A That is my understanding.

17 Q Would it surprise you if Mr. Boehmke was
18 communicating with Anthony Levandowski about beam
19 spacing prior to August of 2016?

20 A I have no knowledge of that. 10:46:13

21 Q Do you understand who Mr. Levandowski is?

22 A I've read about him in the newspaper.

23 Well, actually online.

24 Q Okay.

25 A I used to read newspapers. 10:46:21

1 A I believe that there are a number of trade 10:50:52
2 secrets Google claims -- Waymo claims.

3 Q So you can't tell me just sitting right
4 here whether the trade secrets are specifically
5 limited to the concept of [REDACTED] 10:51:02
6 [REDACTED] or whether they're more
7 specific?

8 A Why don't we add to the list of things
9 you'll get at the break the trade secret list --

10 Q Of course. 10:51:12
11 A -- so that I can look at the trade
12 secrets.

13 Q But you offered a declaration on these
14 trade secrets, correct?

15 A Yes, I did. 10:51:17

16 Q And sitting here right now, having done
17 the analysis, I'm just asking if you can tell me
18 whether the trade secrets are specifically limited
19 to the concept of [REDACTED]

20 [REDACTED]. 10:51:26

21 A The main issue I would have with the other
22 trade secrets is the fact that since Uber
23 independently developed their LiDAR, then I believe
24 the exact details of these trade secrets are not
25 that relevant. That's just my understanding of what 10:51:43

1 a trade secret is. 10:51:45

2 Q Okay. Do you agree with me that the trade
3 secrets are not simply the concept of [REDACTED]
4 [REDACTED]?

5 A I believe that Waymo is claiming more 10:52:02
6 trade secrets than just that.

7 Q Is it your understanding that one of the
8 trade secrets is specifically limited to the concept
9 of [REDACTED]?

10 A I don't remember the exact wording of that 10:52:17
11 trade secret. But I believe the main point was
12 [REDACTED], which I
13 disagree with.

14 Q Do you recall seeing the words [REDACTED]
15 [REDACTED] in Waymo's trade secret list? 10:52:27

16 A I believe that Waymo/Google probably
17 was -- they did not use that. They did not use
18 that.

19 Q And you looked at the declaration from
20 some Waymo engineers, correct? 10:52:39

21 A I looked at one from Droz who did the
22 design. Yes.

23 Q And Mr. Droz didn't say that that was
24 their -- their design was to simply implement
25 [REDACTED], correct? 10:52:53

1 A He did not use the words [REDACTED] 10:52:55

2 [REDACTED] I'm the one who started to use the words

3 [REDACTED]

4 Q [REDACTED] typically refers to [REDACTED]

5 [REDACTED] 10:53:05

6 [REDACTED]

7 [REDACTED]; is that fair?

8 A I might characterize it somewhat different
9 than that.

10 I would say [REDACTED] 10:53:15

11 [REDACTED]

12 Q Okay. Did you cite any documents that
13 specifically have that definition in it in your
14 declaration?

15 A I don't remember -- I mean, I cited two 10:53:32
16 documents in my declaration that used [REDACTED]

17 [REDACTED], and there's been many,
18 many documents that -- some of which I reference
19 in -- you know, that I looked at on [REDACTED]

20 Now I've forgotten exactly what the 10:53:50
21 question is.

22 Q No problem. We can go to the next
23 question.

24 A Okay.

25 Q You mentioned two specific papers. One of 10:53:57

1 those is the PanDAR publication? 10:53:58

2 A Yes, it is.

3 Q I'll refer you to paragraph 52 of your

4 declaration.

5 A Okay. 10:54:05

6 Q I believe this is where you have

7 discussion of the PanDAR device.

8 A Yes.

9 Q Were you involved in the development of

10 the PanDAR device at all? 10:54:13

11 A No, I was not. I knew a lot of people at

12 HRL, but I didn't know these particular people that

13 published this.

14 Q HRL, is that a research lab?

15 A It is. It used to be Hughes Research 10:54:23

16 Laboratory, but now it just stands for HRL

17 because Hughes doesn't exist anymore.

18 Q This PanDAR paper was published in 2015?

19 A I believe you are correct.

20 Q Do you agree this describes the state of 10:54:38

21 the art in 2015 for certain autonomous vehicle LiDAR

22 systems?

23 A I don't know that. I guess I'm not --

24 this is -- they had a couple of points in this paper

25 that they wanted to make. 10:54:55

1 So I guess I would not characterize this 10:54:58
2 as necessarily describing the state of the art.
3 They were using commercial -- commercially available
4 LiDARs. They were overlapping them in order to have
5 a foveal region. 10:55:10
6 But I believe it would be a step too far
7 to compare this to the state of the art. They were
8 using whatever devices they needed in order to make
9 the scientific points they needed to make in this
10 paper. 10:55:26
11 Q Okay. And the device that's described in
12 the PanDAR paper mounted to Velodyne 32E LiDAR
13 devices on top of each other, correct?
14 A Yes, that is correct.
15 Q And is it correct that the bottom one was 10:55:36
16 flipped upside down?
17 A Yes. One of them was.
18 Q One of them was flipped upside down.
19 And you actually have -- in paragraph 52,
20 you've got a couple figures from the PanDAR paper. 10:55:46
21 Do you see that?
22 A Yes, I do.
23 Q And this figure shows that the PanDAR
24 device overlaps 16 of the lasers from each of the
25 two devices in the middle of the field of view, 10:56:00

1 correct? 10:56:02

2 A Yes, it does.

3 Q Does the figure show a 60-degree vertical

4 field of view?

5 A Yes, it does. 10:56:08

6 Q The top 20 degrees has 16 lasers, correct?

7 A Yes.

8 Q And that's identified as the periphery?

9 A Correct.

10 Q And the lower 20 degrees also has 16 10:56:17

11 lasers?

12 A Yes, it does.

13 Q That's also identified as the periphery?

14 A Yes, it is.

15 Q Then the middle 20 degrees has 32 lasers 10:56:24

16 resulting from the overlap, correct?

17 A Yes, that is true.

18 Q And that's identified as the fovea?

19 A Yes.

20 Q And the Velodyne 32E devices, they each 10:56:33

21 have 32 uniformly spaced lasers, correct?

22 A Those were commercially available devices

23 that they used. And yes, those devices were

24 uniformly spaced.

25 Q Okay. So the PanDAR device implemented 10:56:46

1 foveated vision without using [REDACTED] 10:56:48

2 [REDACTED], correct?

3 A They -- they used two commercially
4 available devices that had [REDACTED] and
5 overlapped them as their method of implementing 10:56:59
6 foveated vision.

7 Q So you agree that the LiDAR system can
8 implement foveated vision without using [REDACTED]
9 [REDACTED]?

10 A Well, in this case, it's really using, I 10:57:07
11 guess, two separate LiDARs and overlapping them.

12 Q But it's not using [REDACTED]
13 [REDACTED]?

14 A In this case, it is not.

15 Q Do you recall that Uber also attempted a 10:57:20
16 design that had two Velodyne sensors stacked on top
17 of each other?

18 A I remember some discussion about that, and
19 they might have even asked Velodyne about delivering
20 two of them. My recollection of that is not that 10:57:33
21 clear.

22 Q Okay. Do you recall this being referred
23 to as the dual-stack design?

24 A I've heard those words.

25 Q Okay. Am I correct that Uber did not 10:57:42

1 choose to go with that design, they went with the 10:57:48
2 Fuji design?

3 A Yes, that is correct. Yes.

4 MR. NEWTON: I think we're right at about 10:57:56
5 an hour, so why don't we take a break.

6 THE WITNESS: That sounds like a good
7 plan.

8 THE VIDEO OPERATOR: This marks the end of
9 Media No. 1 in the deposition of Dr. Paul McManamon.
10 We're going off the record at 10:58 a.m. 10:58:04

11 (Recess, 10:58 a.m. - 11:15 a.m.)

12 THE VIDEO OPERATOR: We're back on the
13 record at 11:15 a.m., and this marks the beginning
14 of Media No. 2 in the deposition of Dr. Paul
15 McManamon. 11:15:05

16 BY MR. NEWTON:

17 Q Dr. McManamon, welcome back.

18 A Thank you.

19 Q So I'd now like to talk about paragraph 54
20 of your declaration. 11:15:13

21 A Okay. I'll be there in a minute. Okay.

22 Q And this paragraph discusses the Velodyne
23 U.S. Patent No. 8,767,190?

24 A Yes.

25 Q And you point out here that the patent 11:15:29

1 The other thing, though, that you should 11:20:22
2 look at in that patent is the fact that they do say
3 that it could be 64 or more.

4 Q Sure.

5 And I just want to compare the two 11:20:29
6 annotations, though, that you provide in your
7 declaration. That's what I'm focused on --

8 A Right.

9 Q -- is what you said in your declaration.

10 And you agree with me that the first 11:20:37
11 annotation you provide in paragraph 55 is going to
12 [REDACTED] than the second annotation
13 you provided in paragraph 57?

14 A I think the more interesting thing is the
15 fact that [REDACTED] 11:20:54
16 [REDACTED].

17 So you're focusing -- it's a [REDACTED]

18 [REDACTED]
19 [REDACTED] [REDACTED]
20 [REDACTED] 11:21:09

21 Q Okay. But I'm interested in the
22 resolution overall.

23 You agree with me that the first
24 annotation you provided in paragraph 55 will have
25 [REDACTED] 11:21:18

1 [REDACTED] ? 11:21:20
2 A I guess your use of the term "resolution"
3 there to me confuses me. [REDACTED]
4 [REDACTED] [REDACTED]
5 [REDACTED] 11:21:32
6 [REDACTED]
7 Now, [REDACTED]
8 [REDACTED] [REDACTED]
9 [REDACTED]
10 [REDACTED] 11:21:44
11 [REDACTED]
12 [REDACTED]
13 [REDACTED] --
14 Q Okay.
15 A -- as they state in the patent. 11:21:57
16 Q So you're not willing to say that these
17 two figures have -- that one has [REDACTED]
18 [REDACTED] ?
19 A I think your use of the term "resolution"
20 there is inappropriate. 11:22:09
21 Q I'm asking about your understanding of
22 resolution. If you talk about the resolution of a
23 LiDAR device --
24 A The resolution --
25 Q Just let me finish my question. 11:22:17

1 A Sorry. I do that. 11:22:18

2 Q I'll start over.

3 A Okay.

4 Q If we're talking about the overall

5 resolution of a LiDAR device, would you agree with 11:22:22

6 me that using -- and I want to use your

7 understanding of "resolution" -- would you agree

8 with me that [REDACTED]

9 [REDACTED]

10 [REDACTED] 11:22:36

11 [REDACTED] ?

12 A Actually, I wouldn't agree with you.

13 Q Okay.

14 A The reason I wouldn't agree with you is

15 because the [REDACTED] 11:22:43

16 [REDACTED]

17 So if you [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED] 11:22:58

21 [REDACTED]. And that's why your use of the term

22 "resolution" to me is awkward here.

23 Q Okay. So I'll use the language of the

24 patent. And the patent says when you remove or you

25 decide not to install certain emitter/detector 11:23:11

1 pairs, you cut down on the number of vertical lines 11:23:15

2 that the sensor produces, correct?

3 A In that region, yes, you do. That I agree
4 with.

5 Q Okay. So do you agree with me that 11:23:23
6 according to the patent, if you go from what you

7 [REDACTED]

8 [REDACTED]

9 [REDACTED] ?

10 A Yes, [REDACTED]. 11:23:37

11 Q And the patent says when you remove or you
12 decide not to install certain laser diodes, you do
13 that to cut down on costs?

14 A Actually, I don't remember that particular
15 phrase. If we get the patent, I could look for it, 11:23:47
16 but I don't remember that particular thing.

17 Q That's not a part of the patent that you
18 cited in your declaration?

19 A It may be a part of the patent. I don't
20 remember those particular words. 11:23:57

21 Q Okay. Is it your opinion that Uber uses
22 the inventions claimed in the '190 patent?

23 A It's my opinion that Uber uses [REDACTED]
24 [REDACTED], and that [REDACTED] is claimed in the
25 '190 patent. 11:24:42